

What is claimed is:

Claim 1. An external mount tire pressure sensor system comprising:

5 a main guide body member having a pair of laterally spaced essentially parallel leg portions joined by an intermediate portion, each leg portion having a slider element bore with an essentially linear section, a first one of said leg portions having an open end attachable to a tire valve stem, the other one of said leg portions having a closed end;

10 a pair of slider elements each translatable located in a different one of said leg portions, said pair of slider elements being mechanically coupled together for translatory motion in unison; the slider element in said first one of said leg portions being in fluid sealing relation with the associated slider element bore;

15 a bias element positioned between said closed end and a free end of the slider element in said other one of said leg portions for urging said pair of slider elements to a neutral position; and

20 a fluid entrance element for communicating internal gas pressure from a vehicle tire mounted on a wheel to a confronting surface of the slider element in said first one of said leg portions so that gas pressure from said tire can produce a translatory force on said slider element in said first leg portion in opposition to the bias element.

Claim 2. The invention of claim 1 wherein said intermediate portion of said main guide body member has an arcuate shape.

25 Claim 3. The invention of claim 1 wherein said pair of slider elements is mechanically interlinked by a stiff, flexible member.

30 Claim 4. The invention of claim 1 wherein said fluid sealing relation between said slider element in said first one of said leg portions and the associated slider element bore is provided by an O-ring seal mounted on said slider element in said first one of said leg portions.

Claim 5. The invention of claim 1 wherein said bias element comprises a compression spring.

5 Claim 6. The invention of claim 1 wherein said fluid entrance element comprises an apertured partition positioned in said slider element bore in said first leg portion adjacent said open end and a plunger member extending toward said open end for engaging the plunger of a tire valve when said sensor system is installed on a tire valve.

10 Claim 7. The invention of claim 6 wherein said first leg portion includes an internally threaded wall portion for attaching said sensor system to a tire valve.

15 Claim 8. The invention of claim 1 wherein said sensor system further includes electrical position contacts mounted in said slider element bore for enabling determination of the translatory position of at least one of said slider elements.

20 Claim 9. The invention of claim 1 wherein said main guide body member is provided with a stiff flexible adjustment wall section for enabling the spatial attitude of said main guide body member to be manually adjusted after said sensor system is attached to a tire valve stem.

Claim 10. The invention of claim 9 wherein said adjustment wall section is located adjacent said open end.

25 Claim 11. The invention of claim 10 wherein said adjustment wall section is located inboard of said fluid entrance element.

Claim 12. A method for monitoring the internal tire pressure of a vehicle tire mounted on a wheel having a radius, said method comprising the steps of:

30 (a) providing a tire pressure sensor having a main guide body member with a sensor axis, a stiff flexible adjustment wall section and a mechanism for enabling attachment of the sensor to a tire valve

stem;

(b) installing the sensor on a tire valve stem; and

(c) manually adjusting the spatial attitude of the sensor relative to the wheel so that the sensor axis is closely aligned with the radius of the wheel.

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Claim 13. The method of claim 12 wherein said step (c) of manually adjusting includes the step of bending the stiff flexible wall section by grasping the main guide body member and manipulating the main guide body member about the stiff flexible wall section.

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Claim 14. A method for substantially reducing the effect of centrifugal force on an externally mounted tire pressure sensor adapted for mounting on a tire valve stem, said method comprising the steps of:

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(a) providing a differential tire pressure sensor having a pair of mechanically connected slider elements each translatablely mounted in a bore in a different leg portion of a main guide body member having a pair of leg portions with essentially parallel axes so that said pair of slider elements move in unison;

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(b) installing the sensor on a tire valve stem; and

(c) manually adjusting the spatial attitude of the sensor relative to the wheel so that the axes are closely aligned with the radius of the wheel.

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Claim 15. The method of claim 14 wherein said step (c) of manually adjusting includes the step of bending the stiff flexible wall section by grasping the main guide body member and manipulating the main guide body member about the stiff flexible wall section.

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